

Serial No. 09/909,229

Filed: December 30, 2004

REMARKS

Claims 1-35 are pending in the present application. Independent Claim 11 has been amended to further clarify what was already provided in Claim 11. Accordingly, the amendment to Claim 11 should not be construed as a narrowing amendment, and amended Claim 11 is just as broad as original Claim 11.

Allowable Subject Matter

Applicant thanks the Examiner for the indication that claims 17 and 18 would be allowable if rewritten in independent form.

Claim Objections

Claim 9 was objected to as being a duplicate of Claim 1. Applicants respectfully traverse this assertion since the method of Claim 1 provides the step of d) sample rate converting the source information as a function of the first rate *and* the second rate. (emphasis Applicant's) Conversely, Claim 9 provides the step of wherin d) comprises sample rate converting the first rate *to* the second rate. (emphasis Applicant's) Clearly, these claims are not duplicative and Applicant respectfully requests withdrawal of the objection to Claim 9.

Claim Rejections – 35 USC §112 first paragraph

Claims 7, 10 and 25 stand objected to pursuant to 35 USC §112 first paragraph for failing to comply with the enablement requirement. With regard to Claim 7, transmitting sample rate converted source information is described in detail on pages 25-28 and Fig. 4 of Applicant's specification. Specifically, as illustrated in Fig. 4, output stage (60) may receive and sample rate convert source information, and then transmit the sample rate converted source information over a synchronous network (12) for receipt by a processing module (62). As described on page 27 lines 16 – 19 of Applicant's specification, "Since the sample rate of the sample converted source information 64 is the same as the network master clock rate (Fn), the sample rate converted source information 64 is clocked into the synchronous network, transmitted and received as in conventional synchronous networks." Due to Claim 7 being clearly enabled by the specification

Serial No. 09/909,229

Filed: December 30, 2004

and drawings, Applicant respectfully requests removal of the 35 USC §112 first paragraph rejection of Claim 7.

With regard to Claims 10 and 25, page 6 lines 1-18 describes:

Transmission of digital information sampled at a source sample rate (F_{si}) different than the network master clock rate (F_n) does not require sample rate conversion to, or any form of synchronization with, the network master clock rate (F_n). Instead, the digital information transmitted over the network represents the source information along with the source sample rate (F_{si}). Synthesized source information may be produced from digital information as a function of the source sample rate (F_{si}) and the network master clock rate (F_n). In addition, when the source sample rate (F_{si}) is synchronized with the network master clock rate (F_n), transmission of digital information may occur as in conventional synchronous networks.

As used herein, the terms "conventional synchronous networks" and "conventional synchronization techniques" describe functionality and techniques present in prior art synchronous networks where synchronization occurs prior to transmission over the synchronous network. Synchronization may be accomplished by synchronizing the frequency of the source sample rate (F_{si}) and the network master clock rate (F_n). Alternatively, synchronization may be achieved by sample rate converting the source sample rate (F_{si}) to the network master clock rate (F_n). (emphasis Applicant's)

In addition, page 9 lines 10-20 of Applicant's specification describe:

The source information is processed by the source node 14 to generate and input digital information 18 into the synchronous network 12. When the source sample rate (F_{si}) is not synchronized with the network master clock rate (F_n), the digital information 18 includes representation of the source information as well as representation of a source sample rate (F_{si}). Alternatively, when synchronization occurs prior to transmission, the digital information 18 may not include representation of the source sample rate (F_{si}). The source sample rate (F_{si}) is the sample rate (or sample frequency) at which the source information is sampled to produce the source information in digital form. The source sample rate (F_{si}) may be faster, slower or the same as the frequency of the network master clock rate (F_n). (emphasis Applicant's)

Further, page 10 lines 9-18 of Applicant's specification describe:

Where the digital information 18 does not include representation of a source sample rate (F_{si}), the corresponding sink node 16 simply processes the source information without sample rate conversion. If, however, the source sample rate (F_{si}) is included, the corresponding sink node 16 first performs sample rate conversion, and then further processes the source information to generate the synthesized source information 20. In one embodiment, the sink node 16 performs sample rate conversion from the source sample rate (F_{si}) to the network master clock rate (F_n). In another embodiment,

Serial No. 09/909,229

Filed: December 30, 2004

the source information is converted to the network master clock rate (Fn) and then to another rate for further processing with the sink node 16. (emphasis Applicant's)

Discussion of source sample rates that are synchronized with the network clock rate and source sample rates that are not synchronized with the network clock rate are further described on at least page 3 lines 14-24, page 13 lines 1-12 and page 28 lines 6-15. Based on the foregoing, Applicant's specification clearly and distinctly describes the relationships as provided in Claims 10 and 25, and Applicant respectfully requests removal of the 35 USC §112 first paragraph rejection of these claims.

Double Patenting Rejection

Claims 1-2, 9, 25-28, 30, 32-33 and 35 stand rejected based on nonstatutory double patenting in view of select Claims of co-pending Patent Application No. 10/223,263 (hereafter "the '263 application"), which is a continuation-in-part of the present application. A terminal disclaimer in compliance with 37 CFR 1.321(c) is attached to overcome this rejection.

Claim Rejections – 35 USC §112 first paragraph

Claims 1-7, 9-15, 19-21 and 23-35 stand rejected pursuant to 35 USC §103(a) as being obvious in view of Applicant's Admitted Prior Art and US Patent No. 6,327,273 to Van der Putten (hereafter "Van der Putten"). In addition, Claims 8, 16 and 22 stand rejected pursuant to 35 USC §103(a) as being obvious in view of Applicant's Admitted Prior Art, Van der Putten and US Patent No. 6,009,109 to Binder (hereafter "Binder"). Applicant respectfully traverses these rejections since all of the features provided in Claims 1-7, 9-15, 19-21 and 23-35 are not taught, suggested or disclosed by the cited prior art either alone or in combination. Thus, a *prima facie* case of obviousness has not been established.

Claims 1-10

Claim 1 describes a method of transmitting digital information over a synchronous network. The method includes processing source information at a first rate to generate digital information, clocking the digital information into the synchronous network at a second rate. The second rate is different than the first rate. The method also includes receiving the digital information over

Serial No. 09/909,229

Filed: December 30, 2004

the synchronous network, and sample rate converting the source information as a function of the first rate and the second rate.

Conversely, Van der Putten describes a telephone system to transmit a timing reference signal and data over a telephone line network. (Col. 1 lines 50-54) The basic purpose and operation of the system described by Van der Putten is so different that comparison with Applicant's invention is difficult. Nevertheless, since an equivalency has been asserted, the differences with Applicant's claimed invention will be discussed.

Van der Putten teaches a system for asynchronous transmission of ATM cells using an asynchronous transmission network (ATM) and transmitters and receivers. (Col. 4 lines 58-62) In Van der Putten, a transmitter (TX) having a transmitter clock (C1) generating clock signals (CLK) and a receiver (RX) having a receiver clock (C1) generating clock signals (CLK') transmit and receive ADSL superframes that include the ATM cells. (Col. 4 lines 52-55 and Col. 5 lines 1-5) The receiver clock and the transmitter clock are synchronized between the transmitter and the receiver. (Abstract and Col. 2 lines 45-54, Col. 1 lines 61-63) An ATM network clock signal (CLK2) is also transported between the transmitter and the receiver. (Col. 5 lines 26-32) The ADSL superframes include frames containing data that is loaded in the frames by the transmitter. (Col. 5 lines 1-5) The ADSL super frames are output to a telephone line for transmission to the receiver based on a reference signal R that is the transformed clock signal of the transmitter clock. (Col. 4 lines 33-37, Col. 5 lines 17-19) The receiver generates a copy of the ATM clock signal (CLK2) based on a phase signal (P) included in the superframes and the receiver clock signal, which is synchronized to the transmitter clock signal. (Col. 5 lines 50-53) The phase signal is the phase difference between the ATM network clock and the reference signal R. (Col. 6 lines 1-3) Using the phase signal, and the synchronized receiver clock signal a "perfect copy" of the ATM clock signal (CLK) is generated and output by the receiver. (Col. 6 lines 29-40) The receiver also extracts the data from the superframe using the receiver clock signal. (Col. 5 lines 19-23)

As is clear from the above-discussion, the phase signal taught by Van der Putten is used to generate a duplicate of the network clock signal, not sample rate converting source information

Serial No. 09/909,229

Filed: December 30, 2004

as is described in Claim 1. In fact, Van der Putten teaches that the generated copy of the network clock signal is simply used to transport the network clock signal through the whole system as is required by the teaching of Van der Putten (Col. 5 lines 27-29). In addition, Van der Putten teaches that the receiver clock signal alone is used to extract data from superframes. Accordingly, even if one was to construe extraction of the data from the superframes as a sample rate conversion, which is clearly not the case, Van der Putten still teaches away from sample rate converting source information as a function of a first rate and a second rate as described in Claim 1. Further, Van der Putten teaches that data is loaded (embedded) into the superframes with a clock rate that is the same as the clock rate at which the superframes are clocked into a network (the transmitter clock rate). Clearly, processing source information with a first rate to generate digital information and clocking said digital information into a synchronous network at a second rate that is different from the first rate is not taught, suggested or disclosed by Van der Putten.

In the office action, it has also apparently been asserted that Applicant's Admitted Prior Art describes many of the limitations claimed. Applicant respectfully traverses the various mischaracterizations that have been asserted. As discussed at length in the background section of Applicant's specification, prior art synchronous transmission requires sample rate conversion of the source information to the sample rate of a network master clock prior to transmission over the synchronous network. (pg. 2 lines 10-17) Clearly, processing information at a first rate to generate digital information and clocking said digital information into a synchronous network at a second rate that is different than the first rate as provided in Claim 1 is not described in Applicant's specification as prior art.

Based on the foregoing, all of the claim features disclosed by Claim 1 are not taught or suggested by Applicants Admitted Prior Art or Van der Putten either alone or in combination. Thus, a *prima facie* case of obviousness has not been established for Claim 1. In addition, Claims 2-10 depend from independent Claim 1 and therefore a *prima facie* case of obviousness has not been established for Claims 2-10 for at least the same reasons. Accordingly, Applicant respectfully requests the removal of the 35 U.S.C. §103(a) rejection of Claims 1-10.

Serial No. 09/909,229

Filed: December 30, 2004

Claims 11-16

Amended Claim 11 provides a method of processing source information for transmission over a synchronous network. The method includes sampling source information at a source sample rate (F_{si}), clocking the source information that is sampled at the source sample rate (F_{si}) into a network frame on the synchronous network at a network master clock rate (F_n), and counting the frequency of the source sample rate (F_{si}) during sampling. In addition, the method includes producing a source counter value ($CV(m)$) as a function of counting the frequency and clocking the source counter value ($CV(m)$) into the network frame at the network master clock rate (F_n).

None of the cited art teaches, suggests or discloses sampling source information at a source sample rate (F_{si}) and clocking the source information that is sampled at the source sample rate (F_{si}) into a network frame on the synchronous network at a network master clock rate (F_n). In addition, the cited prior art fails to teach, suggest or disclose counting the frequency of the source sample rate (F_{si}) during sampling and producing a source counter value ($CV(m)$) as a function of counting the frequency and clocking the source counter value ($CV(m)$) into the network frame at the network master clock rate (F_n) as also provided in Claim 11. In fact, the office action fails to even assert that these limitations are met by the cited prior art and instead simply disregards these limitations. The MPEP requires that each and every limitation be considered (MPEP §2143.03). Accordingly, it is respectfully requested that the rejection of Claim 11 be withdrawn as being improper.

Furthermore, Van der Putten teaches away from producing a source counter value ($CV(m)$) as a function of counting a frequency, and clocking the source counter value ($CV(m)$) into a network frame as described in Claim 11, since Van der Putten teaches that a phase signal is clocked into the frames. As taught by Van der Putten, the phase signal is a phase difference between a network clock and a reference signal R derived from a transmitter clock. Clearly, a phase difference between two clock signals as taught by Van der Putten is not a source counter value ($CV(m)$) produced as a function of counting a source sample rate (F_{si}). In addition, Van der Putten teaches away from clocking a source counter value ($CV(m)$) into a network frame at the

Serial No. 09/909,229

Filed: December 30, 2004

network master clock rate (Fn) as provided in Claim 11, since Van der Putten teaches that frames are clocked onto a telephone line at the transmitter clock rate.

Accordingly, all of the claim features disclosed by Claim 11 are not taught or suggested by Applicants Admitted Prior Art or Van der Putten either alone or in combination. Thus, a *prima facie* case of obviousness has not been established for Claim 11. In addition, Claims 12-16 depend from independent Claim 11 and therefore a *prima facie* case of obviousness has not been established for Claims 12-16 for at least the same reasons. Thus, Applicant respectfully requests the removal of the 35 U.S.C. §103(a) rejection of Claims 11-16.

Claims 19-24

Claim 19 provides a method of processing source information transmitted over a synchronous network as digital information. The method includes counting the frequency of a network master clock rate (Fn) to produce a network counter value (NCV), and extracting a source counter value (CV(m)) from digital information transmitted over the synchronous network. The source counter value (CV(m)) represents the sample rate of the source information. In addition, the method includes sample rate converting the source information as a function of the network counter value (NCV) and the source counter value (CV(m)).

Again, Applicant respectfully traverses the mischaracterizations that have been asserted regarding disclosure in Applicant's specification. In the office action, it has apparently been asserted that Applicant's specification discloses counting the frequency of a network master clock rate (Fn) to produce a network counter value (NCV). However, the only discussion of counting a network clock rate to produce a network counter value in the specification is with regard to the description of Applicant's invention. Similarly, discussions in the specification related to extracting a source counter value (CV(m)) from digital information transmitted over the synchronous network as described in Claim 19 can only be construed as part of Applicant's invention.

The office action has cited portions of Applicants specification where example hardware has been identified that can be used to build portions of Applicant's invention, namely a storage

Serial No. 09/909,229

Filed: December 30, 2004

device and a sample rate conversion device discussed on page 18 of Applicant's specification. Apparently disclosure of hardware related elements that are identified and described simply to fully enable the invention have been construed in the office action as somehow disclosing the functionality of the invention as prior art. Clearly the configuration and functionality of such devices in the context of Applicants invention is not described as prior art, and such conventional devices in and of themselves do not teach, suggest or disclose the operability and functionality of Applicant's invention.

Also, neither the background section of Applicant's specification or Van der Putten teach, suggest or disclose transmission over a synchronous network of a source counter value (CV(m)) that represents the sample rate of source information. Thus, it follows that none of the cited prior art could possibly teach, suggest or disclose extracting a source counter value (CV(m)) from digital information transmitted over the synchronous network. In addition, Van der Putten fails to teach, suggest or disclose sample rate converting the source information as a function of the network counter value (NCV) and the source counter value (CV(m)) as described in Claim 19.

Applicant respectfully asserts that all of the claim features disclosed by Claim 19 are not taught or suggested by Applicants Admitted Prior Art or Van der Putten either alone or in combination. Thus, a *prima facie* case of obviousness has not been established for Claim 19. In addition, Claims 20-24 depend from independent Claim 19 and therefore a *prima facie* case of obviousness has not been established for Claims 20-24 for at least the same reasons. Accordingly, Applicant respectfully requests the removal of the 35 U.S.C. §103(a) rejection of Claims 19-24.

Claims 25-35

Claim 25 describes a system for transmitting digital information at various sample rates over a synchronous network. The system includes a source node and a synchronous network. The source node is operable to generate digital information. The digital information comprises source information sampled at a first rate. The synchronous network is coupled with the source node. The synchronous network is operable at a second rate different than the first rate. The

Serial No. 09/909,229

Filed: December 30, 2004

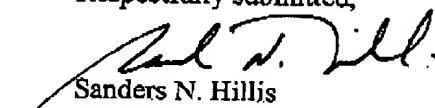
digital information is clocked into the synchronous network at the second rate absent sample rate conversion.

In contrast, none of the cited prior art teaches, suggests or discloses digital information sampled at a first rate that is clocked into a synchronous network at a second rate absent sample rate conversion as described in Claim 25. Thus, each and every claim feature included in Claim 25 has not been taught, suggested or disclosed by Applicants Admitted Prior Art or Van der Putten and a *prima facie* case of obviousness has not been established. In addition, a *prima facie* case of obviousness has not been established for Claims 20-24, which depend from independent Claim 25, for at least the same reasons. Accordingly, Applicant respectfully requests the removal of the 35 U.S.C. §103(a) rejection of Claims 25-35.

Conclusion

With this amendment and response, Applicant believes that the present pending claims of this application are allowable and respectfully requests the Examiner to issue a Notice of Allowance for this application. Should the Examiner deem a telephone conference to be beneficial in expediting allowance/examination of this application, the Examiner is invited to call the undersigned attorney at the telephone number listed below.

Respectfully submitted,


Sanders N. Hillis
Attorney for Applicant
Attorney Reg. No. 45,712

BRINKS HOFER GILSON & LIONE
Customer No. 29074
Telephone: 317-636-0886
Facsimile: 317-634-6701